

CLAIMS

I claim:

1. A variable width backhoe bucket, wherein the width of the backhoe bucket can be reversibly adjusted between a minimum value and a maximum value, comprising:

a middle shell having a curved bottom, first and second opposite sides, and first and second opposite ends, wherein the first opposite end is configured to attach to a stick section of a backhoe boom,

a first side shell flanking the first opposite side of the middle shell, and a second side shell flanking the second opposite side of the middle shell, wherein each side shell defines a bottom and a side panel such that the side shells are in substantially mirror symmetry with respect to each other; and

a constrained guidance system, comprising:

a plurality of elongated male members such that at least one elongated male member is attached to and traverses across the bottom of each side shell,

a plurality of complementary elongated female members that are attached to and traverse across the bottom of the middle shell, wherein the elongated female members each comprise

a bore configured to accommodate one of the plurality of elongated male members, and

a first and second oppositely opposed hydraulic cylinders with opposite ends, one opposite end of the first and second cylinders respectively attached to the first and second side shells and the other opposite ends of the first and second cylinders respectively attached to the first and second side shells;

whereby the constrained guidance system reversibly moves the first and second side shells in and out relative to the middle shell thereby reversibly adjusting the width of the backhoe bucket.

2. The variable width backhoe bucket according to claim 1, wherein the middle shell, and each side shell are each about one foot in width.

3. The variable width backhoe bucket according to claim 1, wherein each side shell is fitted with a reinforcement member.

4. The variable width backhoe bucket according to claim 1 further comprising an attachment member attached to the first end of the middle shell, wherein the attachment member is

configured to enable attachment of the backhoe bucket to a stick section of a backhoe.

5. The variable width backhoe bucket according to claim 1, wherein the male and female members are of generally tubular shape.

6. The variable width backhoe bucket according to claim 1, wherein the male and female members have an overall rectangular cross-section.

7. The variable width backhoe bucket according to claim 1, wherein the male and female members have an overall polygon cross-section.

8. The variable width backhoe bucket according to claim 1, wherein the constrained guidance system controllably adjusts the width of the backhoe bucket from about eighteen inches to about three feet.

9. The variable width backhoe bucket according to claim 1, wherein the constrained guidance system controllably adjusts the width of the backhoe bucket from about two feet to about three feet.